

# **Web Services SDK**

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# **POWER**

*Windows DNA 2000*

*Readiness Conference*

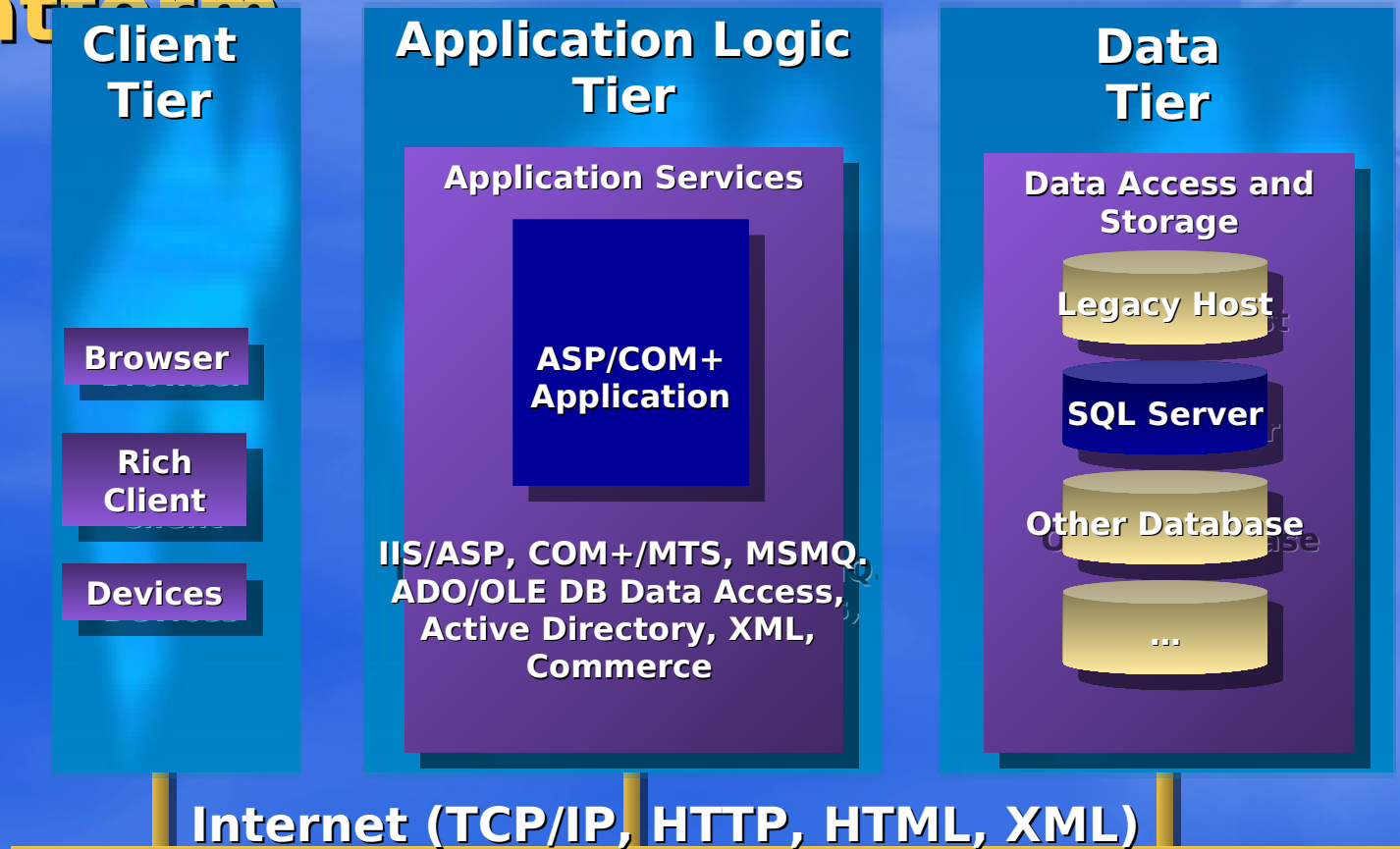
**///** featuring SQL Server 2000

# Agenda

- **Web Services Overview**
- **Web Services SDK Features**
- **Demo**
- **Business Models**

# Windows DNA 2000

## Next Generation Web Application Platform



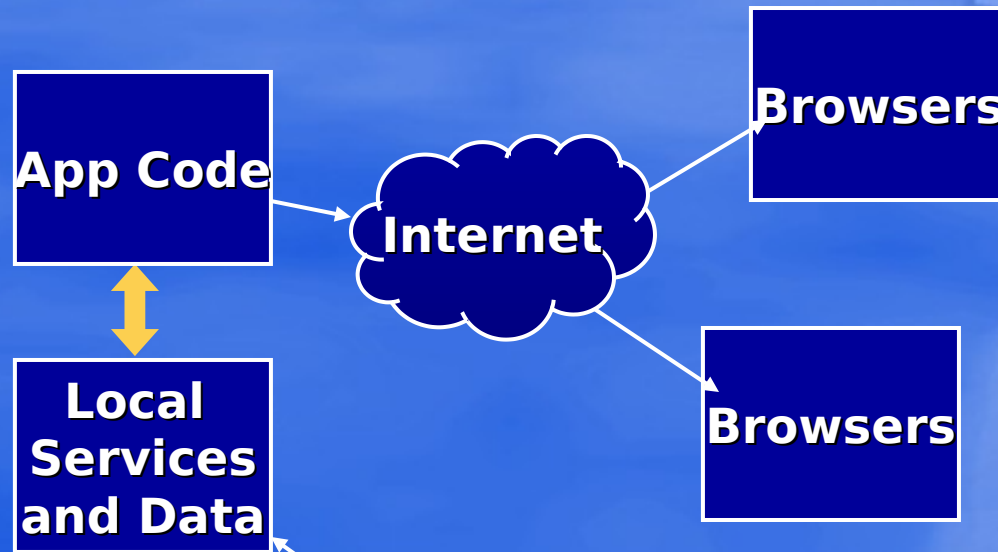
Microsoft  
**SQL Server 2000**  
Server2000  
Microsoft  
**Application Center 2000**



Microsoft  
**Commerce Server 2000**  
Microsoft  
**Host Integration Server 2000**

Microsoft  
**BizTalk Server 2000**

# App Development Today



Historically, most development efforts have been directed toward building apps using rich local services.

Web app developers took advantage of these local services and used HTML to “project” the UI to lots of clients.



# Integrating Web Services

**Mail**

- [Check voicemail/Email](#)
- [Calendar/Address Book](#)
- [Content](#) • [Layout](#) • [Colors](#)

**Calendar**

Tuesday, January 11, 10:53PM

**News** Worst-Dressed Celebs  
Poll: AIDS Insurance Bias?  
Get it! Big Fast Cable  
New! Taxes Step by Step  
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**My Stocks** edit — x

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**splick's Portfolio**

Symbol	Price	Change
Nasdaq	3921.19	-128.48 (-3.17%)
Dow	11511.08	-61.12 (-0.53%)
S&P 500	1438.56	-19.04 (-1.31%)
AMZN	66.75	-2.44 (-3.52%)
BRCA	268.00	-27.56 (-9.33%)
CSX	77.00	-3.31 (-3.02%)
IBM	119.00	1.00 (+0.85%)
INTC	89.69	3.94 (+4.59%)
MSFT	109.38	-2.88 (-2.56%)
SUNW	77.75	-0.94 (-1.19%)
T	51.81	0.94 (+1.84%)
YVWK	74.19	5.69 (+8.30%)

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\* = News Today

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**Other Services**

**Logging**

**Ads**

**SAVE \$90 on I JAM!**  
MP3 MUSIC PLAYER W/FM STEREO

**My News** edit — x

[Top Stories](#) | [Photos](#) (Jan 11 10:28PM)

- [Pinochet Declared Unfit for Trial](#)
- [Judge, Elian's Miami Family Linked](#)
- [McCain Plan Offers Savings Accounts](#)

**ZDNet Tech News** edit — x

- [AOL Time Warner's future interactive](#)
- [Blockbuster merger to boost broadband](#)
- [Yahoo! earnings beat The Street](#)

**Business News** (Jan 11 10:22PM)

- [Nasdaq Is Off 127.04; Dow Off 71.12](#)
- [SEC Settles Case Against Informix](#)
- [Critics Fear Dilution of News](#)

**Sports News** (Jan 11 9:50PM)

- [No. 11 Michigan St Tops No. 10 Indiana in OT](#)
- [No. 5 Auburn Edges 23rd-Ranked Kentucky](#)
- [Bucs QB Diller Out for Playoff Game, King to Start](#)

**Oddly Enough News** (Jan 11 4:41AM)

- [13th Fire Unlucky for Arsonist](#)

**My Weather** edit — x

**Forecast for Wed Jan 12**

**Weather**

**Alderwood Manor, WA** 35°...41°  
Chilly, Overcast, Light rain F

**Seattle/King County Int'l Airport, WA** 35°...41°  
Chilly, Overcast, Light rain F

**Seattle/King County Int'l Airport, WA** 36°...42°  
Chilly, Overcast, Light rain F

[Airport Delays](#)

City or Zip:

**My Services** edit — x

**Get alerts on new products & price changes!**

- [AT&T Communication Center](#)
- [Buy Software at Beyond.com](#)
- [Buy CDs at CDNOW.com](#)
- [Find a Home at HomeBuilder.com](#)
- [Buy Movies at Amazon.com](#)

**Session State**

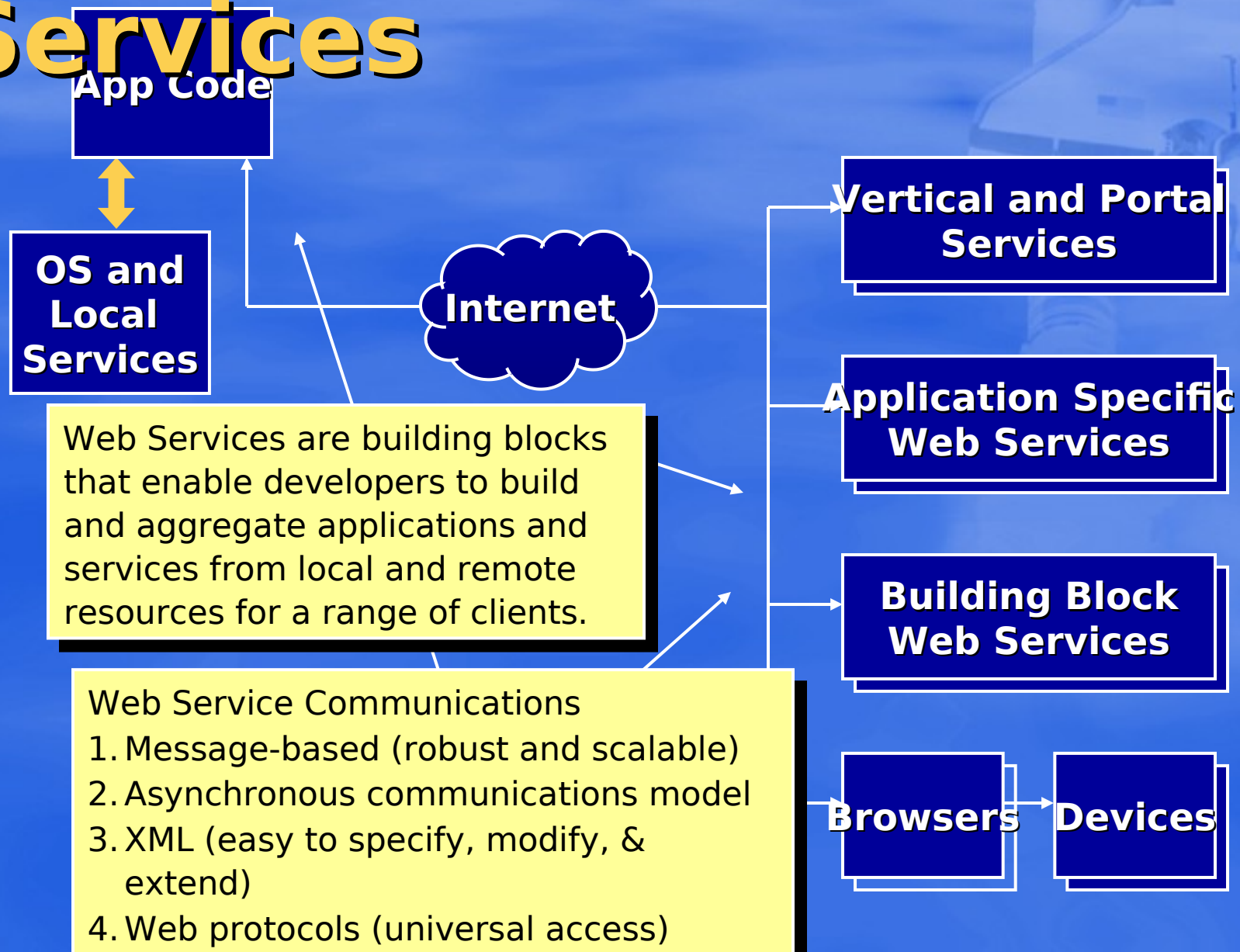
**User State**

**User Activity**

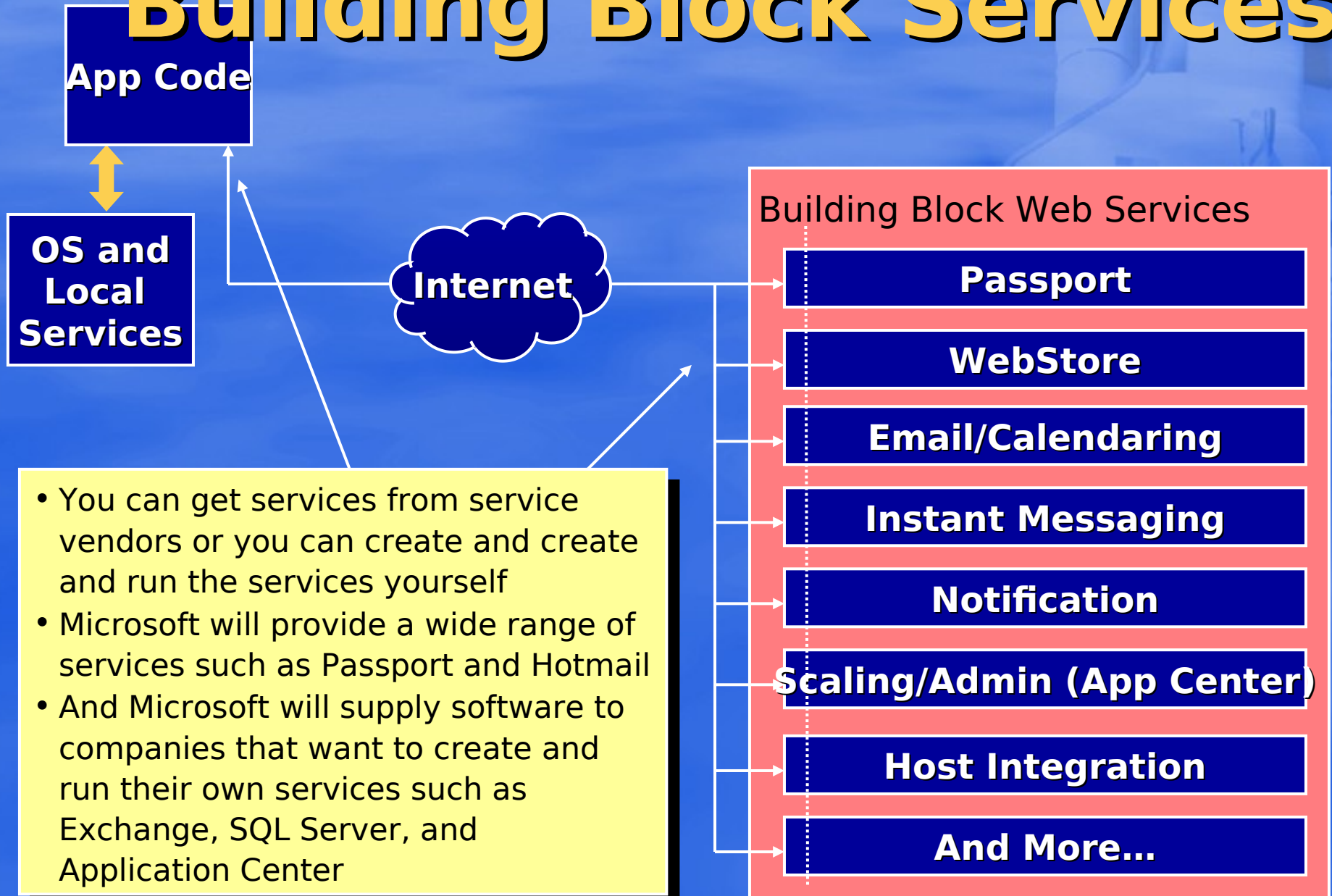
Auction Monitoring

Price Watching

# Moving To Web Services



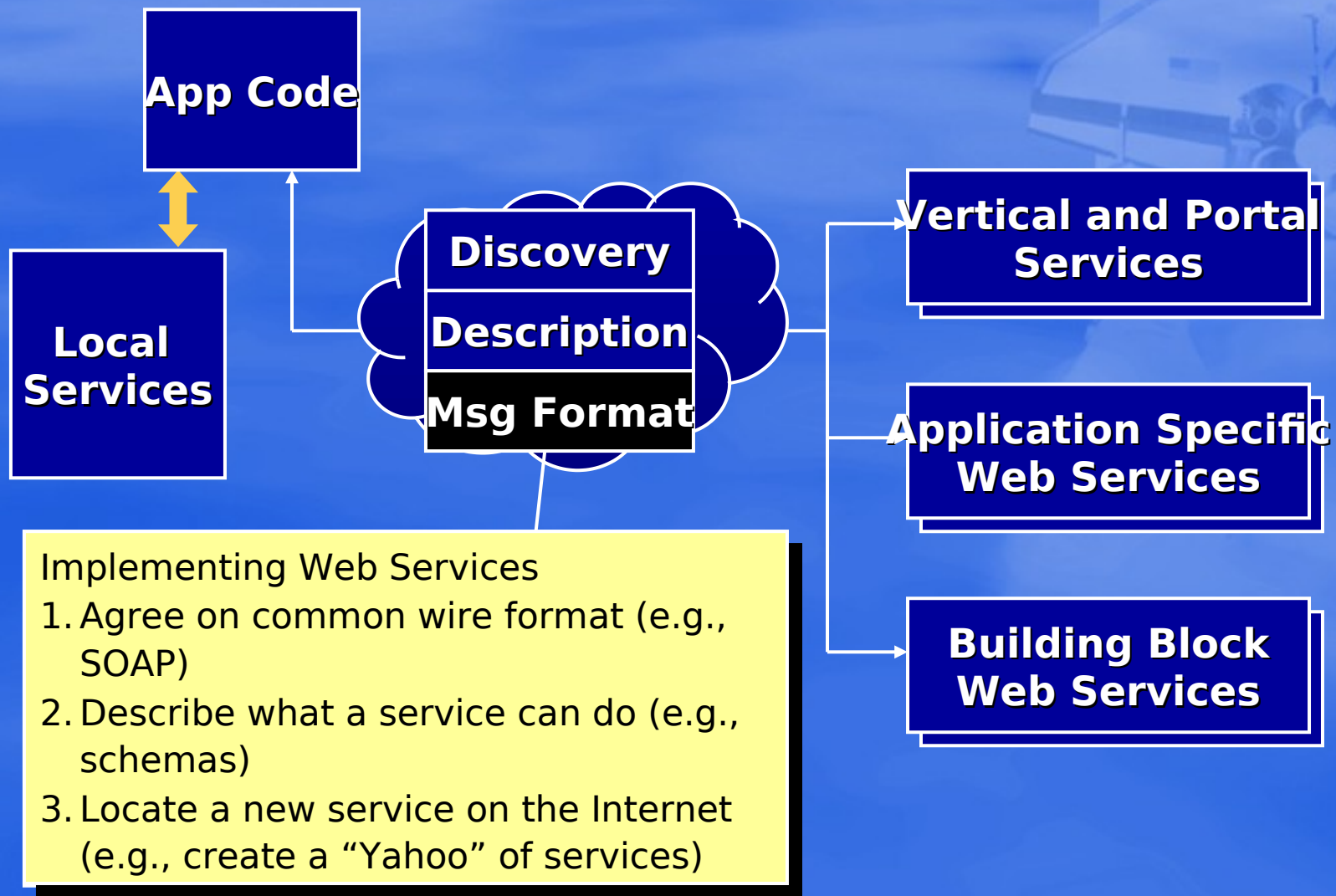
# Building Block Services



Protocol Implementation



# XML On The Wire



# SOAP Today

- **Designed to perform Web method invocations**
- **OS, object model, language agnostic**
- **HTTP + XML on the wire**
- **Works over existing Internet infrastructure**
- **Builds on**
  - **W3C XML standards**
  - **IETF HTTP standard**
- **SOAP Spec v1.0 to IETF**
  - **<http://www.ietf.org/internet-drafts/draft-box-http-soap-01.txt>**

# SOAP Message Structure

**SOAP Message**

← The complete SOAP Message

**HTTP Headers**

← Standard HTTP and SOAP HTTP Headers

**SOAP Envelope**

← <Envelope> encloses payload

**SOAP Header**

← <Header> encloses headers

**Headers**

← Individual headers

**SOAP Body**

← <Body> contains SOAP Method Call

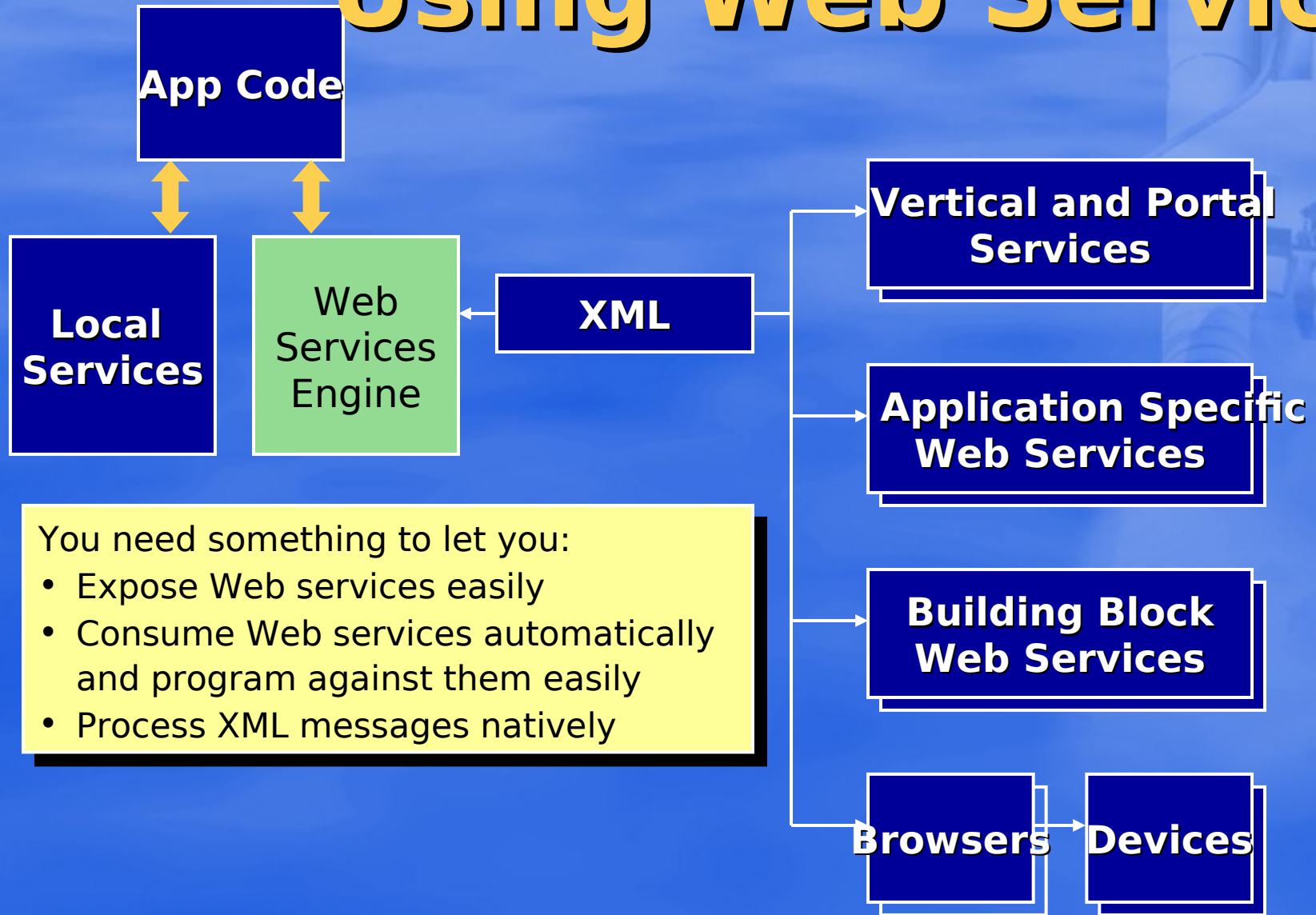
**Method Call & Data**

← XML Encoded SOAP Method Call & Data

# Web Services Security

- **Builds on HTTP security**
  - **HTTPS**
  - **X.509 certificates**
- **Developers/IT choose which methods to expose explicitly**
- **Does not pass application code**
- **Firewall friendly**
- **Type safe**

# Using Web Services

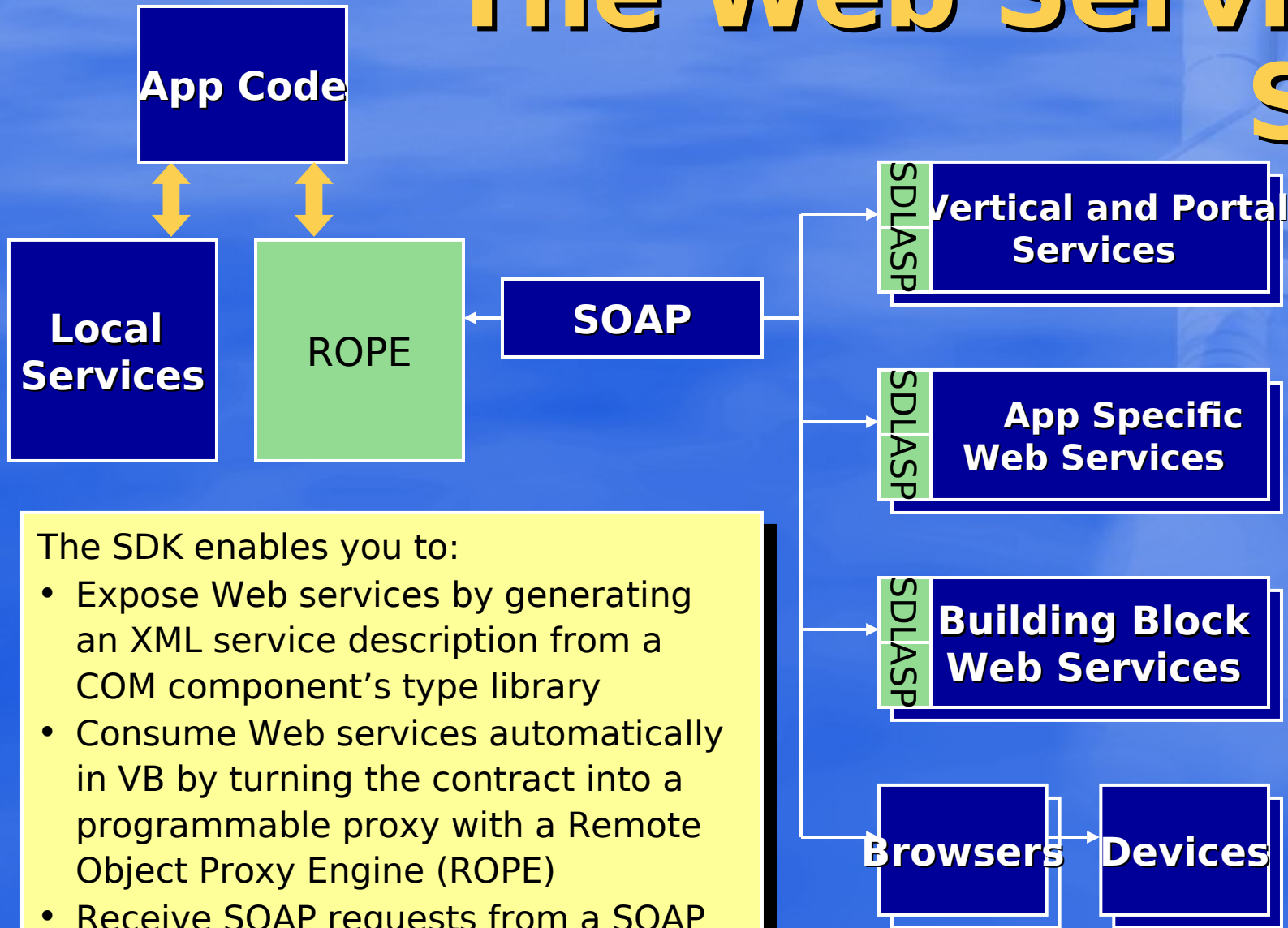


You need something to let you:

- Expose Web services easily
- Consume Web services automatically and program against them easily
- Process XML messages natively



# The Web Services SDK



The SDK enables you to:

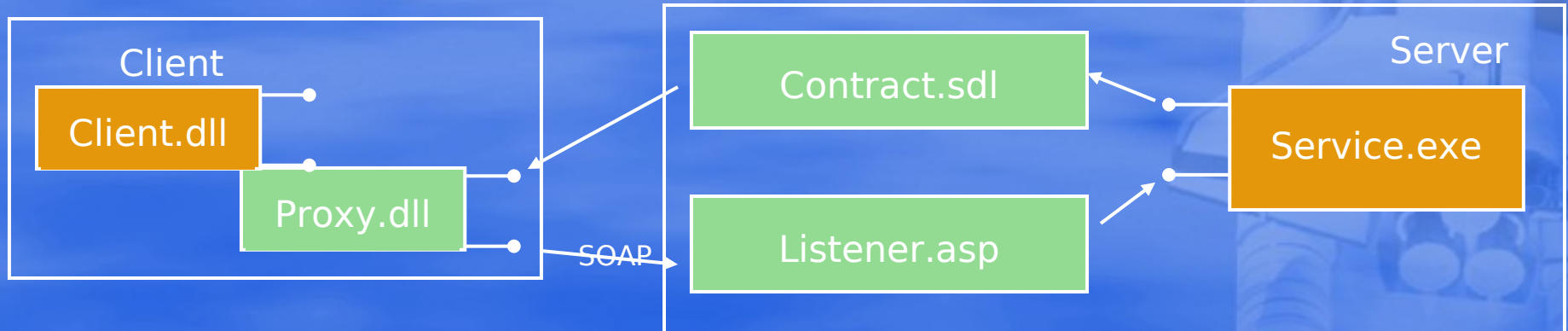
- Expose Web services by generating an XML service description from a COM component's type library
- Consume Web services automatically in VB by turning the contract into a programmable proxy with a Remote Object Proxy Engine (ROPE)
- Receive SOAP requests from a SOAP client (e.g., the proxy) with an ASP or ISAPI "listener"

# **Web Services SDK**

## **Goals**

- **Easily expose Web Services as COM interface(s) through SOAP and SDL**
- **Access client-side infrastructure via Visual Studio Add-Ins for VB**
- **Projects created today are forwards compatible**

# How It Works



2. Consuming a service. Once

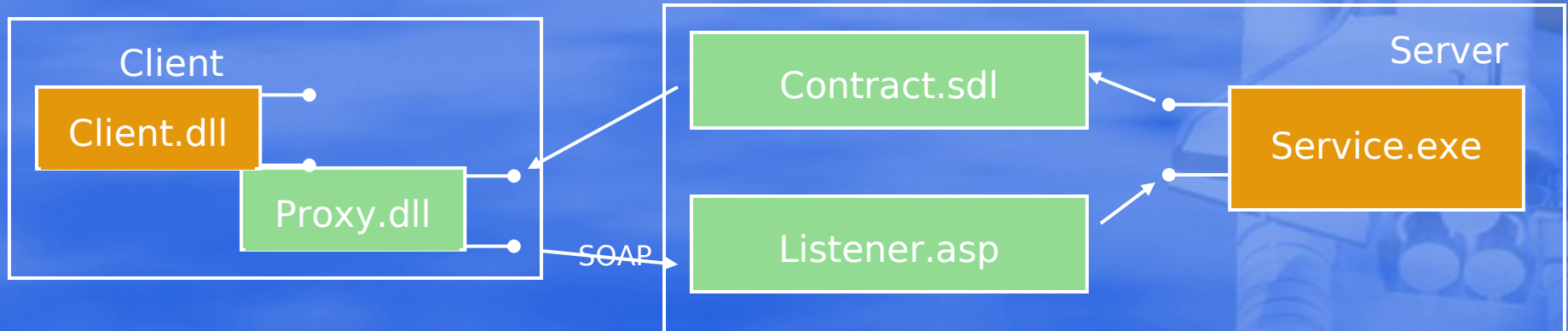
the service is generated, the automatic engine (RPC) into Visual Studio instantiates that the proxy as though object.

3. Running against a service. When you then run the client application, the proxy makes calls across the network using SOAP to the SDK's Listener application (either the ASP or ISAPI version). The Listener then handles starting up and interacting with the actual service application.

1. Exposing a service. If the service you

a COM component, the SDK's which extracts an XML n. Otherwise, you ur service ling to the rules DL specification.

# Features



## Client

Remote Object Proxy Engine to expose services (SDL) as objects with methods.

Transfer Engine for client to server communication (POST, M-POST, GET, SetHeaders(), etc.).

SOAP serializer

## Server

- SDL Extractor to aid in the creation of a service description for existing COM components and any required header files
- ISAPI Listener Generator to create a skeleton ISAPI listener
- ASP Listener Generator to create a skeleton ASP listener

# Demo





# **Web Services Benefits**

- **Everyone**
  - **Leverage existing infrastructure**
  - **“Build or buy” development decisions**
  - **Minimize development time/costs**
- **Enterprises**
  - **Integration imperative**
  - **Dynamic, easy B2B relationships**
- **New Web-based businesses**
  - **Greater personalization**
  - **New services/new revenue streams**
  - **Be “everywhere” vs. single destination**

# A Business Consumer Architecture



## Provider

### Information Services

- News, Sports, Radio
- White Pages, Yellow Pages

### Location Services

- Navigation, Mapping

- Advertising
- Alerting
- Analysis / Reporting
- Authentication
- Authorization

## Megaservices

- Billing
- Comparison
- Licensing
- Logging

- Notification
- Preferences
- Service and Content Mgmt

**Aggregators** (combine multiple services)  
• **Transforms** (apply a particular construct to the returned set)



### Travel Services

- Information
- Reservations

### Business Services

- Tax information
- Banking, trading

### Shopping Services

- Auction
- Gift lists

### Storage Services

- Backup

# Web Services Biz Models

	B2B	B2C
Free	☞	☐
Subscription/ Usage	☐	☐
Take a Cut	☐	☐
Advertising	☐	
Software	☐	

- Five basic models
- Mix-n-Match
- Some require serious infrastructure

# **Infrastructure Support**

- **DevelopMentor Inc.**
- **Digital Creations**
- **IONA Technologies PLC**
- **Jetform**
- **ObjectSpace Inc**
- **Rockwell Software Inc.**
- **Rogue Wave Software Inc.**
- **Scriptics Corp.**
- **Secret Labs AB**
- **UserLand Software Inc**
- **Zveno Pty. Ltd.**
- **...**

# Call To Action

- **Web services/megaservices are the next generation of Web application**
- **The SDK makes it easy to expose and consume them**
- **Provide a service**
  - **Review SOAP specification**
  - **Sign up for DevelopMentor SOAP mailing list (<http://www.develop.com/soap>)**
  - **Implement with Web Services SDK when it's available (end of**



# Questions



# **POWER**

# **UP**



**Microsoft®**

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